CLAIMS

1. An internal combustion engine having a plurality of cylinders containing pistons connected with a crankshaft for transmitting power, the cylinders having closed ends, intake and exhaust ports communicating with the cylinders, valves operable to open and close the ports to air and exhaust flow to and from the cylinders, a pressure oil lubrication system operative to lubricate at least the cylinders, pistons and crankshaft of the engine, and the improvement comprising:

a valve actuating system including hydraulic actuators operable to actuate the valves; and

a pressure oil hydraulic system separate from the lubrication system and operative to selectively supply pressure hydraulic oil to the hydraulic actuators to actuate the valves in a predetermined manner.

2. An engine as in claim 1 wherein the hydraulic system includes a reservoir located below the actuators and positioned to receive oil discharged from the actuators and returned by gravity flow to the reservoir.

3. An engine as in claim 2 wherein the cylinders are contained in a cylinder block and the reservoir is contained within the cylinder block.

4. An engine as in claim 3 wherein cylinder block includes two cylinder banks arranged in a V and forming a valley between the cylinder banks, and the reservoir is contained in the valley

5. An engine as in claim 1 wherein the hydraulic system includes a high pressure oil pump operative to draw oil from a reservoir and supply pressurized oil to the actuators to actuate the valves.

6. An engine as in claim 5 wherein the high pressure oil pump is drivably connected to the crankshaft for driving the pump from the crankshaft

7. An engine as in claim 5 wherein the hydraulic system further includes an oil filter and an oil cooler connected between the high pressure oil pump and the actuators.